Glucosamine & Insulin Resistance: Cause for Concern?

Glucosamine is a popular nutritional supplement in both human and veterinary medicine. Intravenous administration causes metabolic insulin resistance and vascular endothelial dysfunction in both animals and humans, so there have been some concerns that glucosamine may cause or worsen insulin resistance. This randomized, placebo-controlled, double-masked, cross-over trial examined the use of oral glucosamine at standard doses (500 mg orally Q 8 H) in lean and obese patients. Treatment duration was 6 weeks in the glucosamine and placebo groups. Compared with placebo, glucosamine did not cause insulin resistance or endothelial dysfunction in lean patients or significantly worsen these findings in obese patients.

COMMENTARY: Because of the findings of intravenous studies in humans, there has been a concern about insulin resistance as a potential adverse effect of oral glucosamine in humans and veterinary patients as well. Although research still needs to be done in companion animals, this study is comforting to those who would like to give glucosamine to patients with or at risk for diabetes mellitus.—The Editors


New Immunotherapy for Feline Chronic Rhinitis

There are many possible causes for chronic rhinitis in cats, a syndrome associated with inflammation of the nasal cavity and, frequently, secondary infection of the frontal sinuses. Many cases have been attributed to chronic viral or bacterial infections, although a direct cause-and-effect relationship can be difficult to prove. While many treatments exist for this condition, none has proven to be consistently effective, and recurrence is common. Previous studies have shown that complexes of cationic liposomes and plasmid DNA (CLDC) are potent stimulators of innate immune responses and might, therefore, be useful in treating feline chronic rhinitis, particularly when viral or bacterial infection is involved. In this study, randomized clinical studies were performed to assess the immunologic and clinical effects of CLDC administration to different groups of cats, including healthy, laboratory-reared cats; older client-owned cats with chronic rhinitis; and young shelter cats with chronic rhinitis.

Four different groups of cats were administered CLDC or a placebo by intraperitoneal injection once weekly for 4 or 6 weeks. Clinical signs and several blood parameters, including cytokine profiles, were determined at regular time points that differed between the groups. In adult cats with chronic rhinitis, sneezing significantly improved in cats treated with CLDC compared with the placebo group, but other clinical signs did not. Clinical signs in the young shelter cats did not significantly improve with immunotherapy. Cytokine profiles documented that CLDC is an activator of innate immunity in cats. The authors concluded that CLDC appears to be well-tolerated and safe and may lead to clinical improvement in adult cats with chronic rhinitis.

COMMENTARY: The chronic feline “sniffer” is a frustrating patient to treat and practitioners frequently reach for antibiotics. These make sense if an organism is identified and its sensitivity is known. Too often, however, bacteria do not play a role in the etiology of chronic respiratory disease. Treatment for viruses is logical, however, we lack specific antivirals that can be used safely and effectively in cats. In this blinded cross-over study, intraperitoneal lipid-DNA complexes encoding the feline IL-2 gene were administered weekly for 4 weeks. Improvement was noted in sneezing and nasal discharge in treated cats as compared to those that had received placebo liposomes. The theory for this improvement is that a Th1-type immune response was induced. Whether this work will result in clinically applicable therapies can only be hoped.—Margie Scherk, DVM, Diplomate ABVP (Feline)